

## 03040202-03

(*Lynches River*)

### General Description

Watershed 03040202-03 (formerly 03040202-050 and 03040202-060) is located in Lancaster, Kershaw, and Chesterfield Counties and consists primarily of the *Lynches River* and its tributaries from Flat Creek to the Little Lynches River. The watershed occupies 145,278 acres of the Piedmont and Sandhills regions of South Carolina. Land use/land cover in the watershed includes: 45.0% forested land, 36.6% agricultural land, 11.1% forested wetland, 5.3% urban land, 0.9% scrub/shrub land, 0.5% water, 0.3% barren land, and 0.3% nonforested wetland.

This section of the Lynches River accepts drainage from its upper reaches. Fork Creek accepts drainage from Canal Branch (Shady Slash Branch), Gum Branch (Dry Branch, Clark Mill Branch), Mill Branch, Meeting House Branch, Joes Branch, and Little Fork Creek (Reedy Fork, Lake Terry, Mose Branch, Canal Branch, Brazzell Branch) before draining into the Lynches River. The river then accepts drainage from Rocky Creek (Long Branch, Little Rocky Creek, Fox Branch, Sycamore Pond), Buffalo Creek (Little Buffalo Creek, South Buffalo Creek, Raley Millpond), Big Sandy Creek (Sevenmile Branch, Oxpen Branch), and Little Sandy Creek. Further downstream, Jumping Gully (Horton Pond) enters the river followed by Swift Creek (North Prong, Rocky Prong, South Prong), Red Oak Camp Creek, Cedar Creek (McGee Branch, Park Pond, Sexton Pond), Hammond Branch (Beard Branch), and Blackwell Mill Stream. The Carolina Sandhills National Wildlife Refuge extends across Big Sandy Creek down to McGee Branch. The Sand Hills State Forest extends across the lower portion of the watershed below the wildlife refuge. There are a total of 273.8 stream miles and 446.9 acres of lake waters in this watershed, all classified FW.

### Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
PD-001	W/INT/BIO	FW	LYNCHES RIVER AT SC 265
PD-647	BIO	FW	LITTLE FORK CREEK AT COUNTY RD 39
PD-215	S/INT	FW	LITTLE FORK CREEK AT S-13-265 1.5 MI SW JEFFERSON
PD-067	S/W	FW	FORK CREEK AT SC 151
PD-068	S/INT	FW	FORK CREEK AT UNNUMBERED ROAD 1.5 MI SW JEFFERSON
PD-066	S/W	FW	LYNCHES RIVER AT S-28-42
PD-009	S/INT	FW	LYNCHES RIVER AT US 1
(PD-080)	P/W	FW	LYNCHES RIVER AT S-28-15 4.5 MI SE BETHUNE

*Lynches River* – There are three SCDHEC monitoring sites along this section of the Lynches River. At the furthest upstream site (*PD-001*), aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in total nitrogen concentration. There is a significant decreasing trend in pH. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Further downstream (*PD-066*), aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. There is a significant decreasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria at this site.

At the next site downstream (**PD-009**), aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. A significant increasing trend in dissolved oxygen concentration and a decreasing trend in total phosphorus concentration suggest improving conditions for these parameters. Recreational uses are fully supported at this site. **PD-080** is physically located downstream in 03040202-05, but reflects the influence from this watershed drainage. Aquatic life and recreational uses are fully supported at this site. A significant increasing trend in dissolved oxygen concentration and decreasing trend in total phosphorus concentration suggest improving conditions for these parameters. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

**Little Fork Creek** - There are two SCDHEC monitoring sites along Little Fork Creek. At the upstream site (**PD-647**), aquatic life uses are partially supported based on macroinvertebrate community data. At the downstream site (**PD-215**), aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute criterion. There is also a significant increasing trend in total phosphorus concentration. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria concentration.

**Fork Creek** - There are two SCDHEC monitoring sites along Fork Creek. At the upstream site (**PD-067**), aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration and an increasing trend in five-day biochemical oxygen demand. Recreational uses are not supported due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria concentration. At the downstream site (**PD-068**), aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. There is a significant decreasing trend in pH. Significant decreasing trends in turbidity, total phosphorus concentration, and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform excursions.

## **NPDES Program**

### **Active NPDES Facilities**

#### **RECEIVING STREAM**

#### **FACILITY NAME**

#### **PERMITTED FLOW @ PIPE (MGD)**

#### **NPDES#**

#### **TYPE**

#### **COMMENT**

LYNCHEs RIVER

AHLSTROM NONWOVENS LLC/BETHUNE

PIPE #: 001 FLOW: 0.89

SC0001341

MINOR INDUSTRIAL

BUFFALO CREEK

MARTIN MARIETTA MAT., INC./CHESTERFIELD

PIPE #: 1AA-5AA FLOW: M/R

SCG730982

MINOR INDUSTRIAL

MOSE BRANCH  
LOAMY LLC./KERSHAW SAND MINE  
PIPE #: 001 FLOW: M/R

SCG730343  
MINOR INDUSTRIAL

BRAZZELL BRANCH  
TOWN OF JEFFERSON WWTP  
PIPE #: 001 FLOW: 0.15

SC0024767  
MINOR DOMESTIC

## **Nonpoint Source Management Program**

### ***Land Disposal Activities***

#### **Landfill Facilities**

***LANDFILL NAME***  
***FACILITY TYPE***

***PERMIT #***  
***STATUS***

KENDALL COMPANY  
INDUSTRIAL

IWP-169  
CLOSED

#### ***Mining Activities***

***MINING COMPANY***  
***MINE NAME***

***PERMIT #***  
***MINERAL***

APAC-CAROLINA, INC.  
ASPHALT PLANT #10

0082-25  
SAND

APAC-CAROLINA, INC.  
ASPHALT PLANT #8

0084-25  
SAND

BUFFALO CREEK MINING CO.  
BUFFALO CREEK MINE #1

1306-55  
SAND/GRAVEL

MARTIN MARIETTA MATERIALS  
CHESTERFIELD QUARRY

1062-25  
GRANITE

## **Growth Potential**

There is a low to moderate potential for growth in this watershed, which contains the Town of Jefferson, portions of the Towns of Bethune and McBee, and is adjacent to the Town of Pageland. S.C. Hwy 151, a major travel corridor from Charlotte to Florence and Myrtle Beach, has been widened to four lanes and a bypass completed around Jefferson. Additional commercial and industrial development is expected along this route. The Town of McBee has water service and has extended it along S.C. Hwy. 151 to the north of town. McBee also has a limited sewer system, which serves some of the industry in the area. Water service is provided for Jefferson and the area immediately surrounding it, along with a well water line running from Lake Terry to Pageland. Water service may be extended along S.C. Hwy 151 between Pageland and Jefferson, which could encourage growth. The remainder of the watershed is rural with agricultural and timberland uses.

## **Watershed Restoration and Protection**

### ***Total Maximum Daily Loads (TMDLs)***

A TMDL was developed by SCDHEC and approved by the EPA for ***Fork Creek*** (monitoring sites ***PD-067*** and ***PD-068***) to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The nonpoint

sources that have been determined to be contributors to the Fork Creek impairment include wildlife; grazing livestock and livestock defecating directly into streams; land application of poultry litter; failed, malfunctioning, and/or operational septic systems; and urban runoff from the Town of Jefferson. To achieve compliance with water quality standards, the TMDL recommends fecal coliform loads be reduced from livestock sources and runoff from poultry litter application by 45 and 20 percent at PD-067, and by 38 and 20 percent at monitoring station PD-068. The implementation of these load reduction allocation scenarios would result in an overall reduction of fecal coliform bacteria loading of 44% at PD-067 and 38% at PD-068, which are the amounts necessary for the stream to achieve compliance at the two water quality monitoring sites.

A TMDL was developed by SCDHEC and approved by EPA for the *Lynches River* water quality monitoring site **PD-066** to determine the maximum amount of fecal coliform bacteria it can receive and still meet water quality standards. Sources of fecal coliform loading could originate from nonpoint sources such as turkeys and land application from turkey AFOs. Other nonpoint sources include wildlife, cattle, pets, and failing OSWD systems (given their low density), which represent only a minor source of loading. The close proximity of the town of Jefferson upstream of WQM station PD-066 suggests that urban runoff may be contributing to fecal coliform exceedances. The TMDL states that an 81% reduction in fecal coliform loading is necessary for the stream to meet the water quality standard.

### ***Special Projects***

#### **Fecal Coliform Bacteria TMDL Study and Implementation for the Fork Creek Watershed**

The Pee Dee Resource Conservation and Development Council (RC&D) along with the Chesterfield Soil and Water Conservation District, the Department of Natural Resources and the Town of Jefferson have developed and are implementing a fecal coliform bacteria TMDL for the Fork Creek watershed. DHEC monitoring stations PD-067 and PD-068 were impaired for fecal coliform bacteria. The RC&D and its cooperators used their local knowledge to assist a contractor with the development of a TMDL. This included an identification of potential pollution sources within the watershed. Following TMDL approval, project cooperators targeted homeowners with failing septic systems in an effort to recruit cost-share participants. Those with failing systems are assisted with repair or replacement of their system. Additionally, the cooperators visited agricultural operations throughout the watershed to identify landowners interested in installing best management practices (BMPs) on their property. These BMPs are designed to exclude animals from creeks and streams and to control animal waste effectively.